

Claims

1. A method for *ex vivo* diagnosis of MHC class II haplotype specific immune responses to H-RSV antigens in a subject, wherein the method comprises the steps  
5 of:
- (a) determining the MHC class II haplotype of the subject;
  - (b) providing a composition comprising peripheral blood mononuclear cells (PBMC's) from the subject;
  - (c) mixing the composition comprising PBMC's with a peptide comprising an amino  
10 acid sequence selected from Table 1 that matches the MHC class II haplotype of the subject in accordance with Table 1; and,
  - (d) determining the proliferation of the PBMC's.
2. A method according to claim 1, wherein in step (d) the proliferation of T cells  
15 is determined.
3. A method according to claim 2, wherein the proliferation of T cells is determined without pre-expansion of the T cells.
- 20 4. A method according to claims 2 or 3, wherein the proliferation of CD4<sup>+</sup> T cells is determined.
5. A method according to claim 4, wherein the proliferation of CD4<sup>+</sup> T cells is determined by measuring IFN- $\gamma$  production.  
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6. A method according to claim 5, wherein IFN- $\gamma$  production is measured in a (direct) elispot assay.
7. A method according to any one of claims 1 - 6, wherein in step (c) the peptide  
30 is mixed with the preparation of PBMC's at a concentration of a least 5 nM.

8. A method according to any one of claims 1 - 7, wherein the immune responses to H-RSV antigens is determined in a subject undergoing or having undergone an infection with H-RSV.
- 5 9. A method according to any one of claims 1 - 7, wherein the immune responses to H-RSV antigens is determined in a subject vaccinated against RSV.
10. Use of a method according to claim 1 - 7, to evaluate correlates of protection in vaccinated individuals.
- 10 11. A method for MHC class II haplotype specific vaccination of a subject against H-RSV, the method comprising the steps of:
- (a) determining the MHC class II haplotype of the subject; and,
- (b) administering to the subject a pharmaceutical composition comprising a peptide
- 15 comprising an amino acid sequence selected from Table 1, whereby the amino acid sequence matches the MHC class II haplotype of the subject in accordance with Table 1.
12. A method according to claim 11, wherein the pharmaceutical composition is
- 20 suitable for parenteral administration and is administered parenterally, or wherein the pharmaceutical composition is suitable for transdermal administration and is administered transdermally.
13. Use of a peptide comprising an amino acid sequence selected from Table 1, for
- 25 the manufacture of a vaccine for MHC class II haplotype specific prophylaxis or therapy of H-RSV infection in a subject, whereby the amino acid sequence matches the MHC class II haplotype of the subject in accordance with Table 1.
14. A use according to claim 13 wherein the vaccine is a pharmaceutical
- 30 composition suitable for parenteral or transdermal administration.